

Review Article

The Relationship between Smoking and Emotional Intelligence in Patients with Coronary Artery Disease

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Abstract

Background: Several studies have found an inverse relationship between emotional intelligence and smoking behavior.

Purpose: The purpose of the research is to examine this relationship.

Methods: The questionnaires used in this research were the following: a demographic questionnaire, the Smoking in psychiatric hospitals-a survey of patients' views, and the TEIQue-SF in order to measure emotional intelligence. The research was conducted on a sample of 152 patients at the Cardiology Clinic of the National University of Athens "Sotiria".

Results: The results indicated that there was a negative statistically significant relation between emotionality and well-being were inversely related to years of smoking and number of cigarettes per day, but a positive statistically significant relation between emotionality and well-being with the age the sample began to smoke. In addition, a statistically significant positive relationship was found between sociability and number of cigarettes/day.

Conclusions: Overall, therefore, it cannot be argued that higher levels of emotional intelligence are related to more positive smoking behaviors such as frequency and age of smoking initiation. Nevertheless, there are indications that emotional intelligence can be an important factor that can reduce the frequency of smoking and strengthen a positive behavior towards stopping this habit. For this reason, it is proposed to design and implement educational programs that aim to strengthen and utilize emotional intelligence, both at the level of prevention and treatment of smoking. However, further studies in a more representative sample of the population are necessary.

Introduction

Cardiovascular diseases are associated with significant morbidity and mortality and are associated with a significant financial burden on health care systems worldwide [1]. Cardiovascular diseases refer to a set of disorders of the heart and blood vessels and include, among others, coronary artery disease [2]. Due to the negative impact of these diseases on the individual and on society as a whole, the importance of early detection and prevention of risk in the appropriate age and risk groups is highlighted, with the aim of implementing interventions that can reduce the risk of developing these diseases. On the one hand, an inverse relationship has been demonstrated between emotional intelligence and cardiovascular disease [3,4], as well as specific health outcomes related to coronary heart disease [5], such as reduced blood pressure. On the other hand, an inverse relationship has also been indicated between emotional intelligence and smoking, which is an important risk factor for coronary heart disease [6-9].

Emotional intelligence is related to the individual's ability to accurately perceive, evaluate, manage and express his/her emotions

[10,11]. Overall, emotional intelligence is defined as the ability to accurately perceive, understand, evaluate, and express emotions, with this emotional knowledge influencing individuals' thinking and behavior [12]. Emotional intelligence mainly includes a person's achievement, adaptability, emotional self-awareness, empathy, mood regulation/self-control, self-evaluation, cognitive ability, conceptual thinking, problem solving, and stress management [13]. Therefore, emotional intelligence is characterized by a series of skills: a) perception, evaluation and expression of emotion, which includes recognition of both one's own emotions and the emotions of others, as well as the ability to express them; b) understanding and analysis of emotions, which allows one to characterize them and understand the relationships between them, as well as the situation that created them; c) control of emotions, the ability to regulate and control the emotions of both one's own person and others.

Consequently, the ability to monitor and use information about one's emotions is important in the context of health behavior, as it can be used to guide thoughts, attitudes, and perceptions [14-16]. It is a psychological mechanism capable of enhancing positive behavioral

changes, as it is based on the ability of a person to deal with negative emotions, the ability to appropriately manage peer pressure to engage in a behavior (e.g. smoking), but also the potential to discourage addiction various substances, such as nicotine. Furthermore, components such as self-control and self-awareness have been found to be effective in reducing individuals' self-destructive behavior [17-19].

In the international literature, a relationship between emotional intelligence and smoking has been found. For example, high levels of emotional intelligence have been found to be a protective factor for smoking [20] and be associated with lower smoking frequency [21]. In addition, emotional intelligence is inversely related to age of smoking initiation. Moreover, it has been found that people with a higher level of emotional intelligence are governed by better perceptions of the negative social consequences of smoking, greater self-confidence to refuse an offer and peer pressure to smoke, and therefore less intention to smoke [22]. Overall, several studies have found an inverse relationship between emotional intelligence and smoking behavior [23,24].

Regarding the impact of demographics, the findings of previous studies lead to ambiguous results. More specifically, it has been found that gender plays a role in the relationship between emotional intelligence and smoking, while age has not been found to have an effect. Apart from demographic data, stress has been found to be an important factor related both to smoking behavior itself [25], and to the relapse of people who have stopped smoking, as it is considered as a coping mechanism for stressful situations. Additionally, it has been found that personality type, paranoid beliefs and anxiety in combination with coping methods, but also emotional intelligence are related to psychopathology in patients with coronary artery disease [26].

Aim and Research Hypotheses

The purpose of the research is to examine the relationship between smoking and emotional intelligence in patients with coronary artery disease. Based on the findings of the international literature stated above, the research hypotheses formulated are the following:

H₁: There is an inverse relationship between emotional intelligence and age of smoking initiation.

H₂: There is an inverse relationship between emotional intelligence and the number of cigarettes per day.

Material and Method

Sample

Convenience sampling was used as the sampling method. More specifically, the researcher addressed to the Cardiology Clinic of the public hospital 'Sotiria' in Athens, Greece. A total of 155 questionnaires were distributed to patients, of which 152 were completed. All questionnaires were valid. The questionnaire was accompanied by a participant information and consent form. Approval permission was received from the Board of Directors of the hospital, under application protocol no. 16773/24-6-21 and a hospital license no. 17810/6-7-21 was also obtained.

Smoking Questionnaire

The Smoking in psychiatric hospitals-a survey of patients' views questionnaire was used [27]. This questionnaire includes the following sections:

- Demographic and smoking information: Name, age, gender, place of birth, residence, marital status, number of children, educational level, occupational status, number of cigarettes per day, age of initiation, years of smoking, duration of smoking cessation, family history of psychiatric disorders.
- Smoking history: Information about individuals' smoking history and whether there have been periods when they had stopped smoking, reasons that encourage or discourage smoking cessation, as well as existing conditions related to smoking.
- Smoking and health: The following factors were examined: Age of smoking initiation, reasons for initiation, number of cigarettes per day, type of cigarette, knowledge of the harmful effects of smoking, and comorbidity.

Emotional Intelligence Questionnaire

The TEIQue-SF questionnaire [28] was chosen in order to measure emotional intelligence. It consists of a total of 30 questions grouped into four categories (well-being, self-control, emotionality, sociability), as shown in Table 1. The answers are given on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). The Cronbach's a index demonstrated a high level of internal reliability overall for the scale (0.944).

Statistical Analysis

Statistical analysis was performed with the Statistical Package for Social Science (SPSS) version 21. Descriptive and inferential statistics (correlations) were used.

Results

Demographic Data

The majority of the participants are men (67.8%), with an average age of approximately 62 years (M=61.9), graduates of higher education (42.1%), married (70.4%), with two children (44.7%), who are currently working (61.8%) (Table 2).

Smoking Habits and Smoking History

Most of the participants, 98.7% (N=150), stated that they have smoked in their lifetime, while 97.4% (N=148) were smoking during the survey period. Moreover, 72.4% (N=110) stated that they have

Table 1: Calculation and reliability of TEIQue-SF scales.

Subscale	Questions	Reliability
Well-being	(5+9+12+20+24+27)/6	0.895
Self-control	(4+7+15+19+22+30)/6	0.660
Emotionality	(1+2+8+13+16+17+23+28)/8	0.883
Sociability	(6+10+11+21+25+26)/6	0.858

Table 2: Respondents' demographic data.

		N (Mean)	% (SD)
Gender	Man	103	67.8
	Woman	42	27.6
	No response	7	4.6
Age		(61.9)	(7.7)
Education	Basic education	48	31.6
	High school	18	11.8
	University degree	64	42.1
	Master/PhD	20	13.2
	No response	2	1.3
Marital status	Single	20	13.2
	Married	107	70.4
	Divorced	12	7.9
	Widow	7	4.6
Number of children	0/No response	24	15.7
	1	16	10.5
	2	68	44.7
	3	39	25.7
	4	5	3.3
Occupation	Unemployed	3	2.0
	Household	9	5.9
	Retired	46	30.3
	Currently employed	94	61.8
Family history of psychiatric disorders	Yes	18	11.8
	No	95	62.5
	No response	39	25.7

never tried to quit smoking, while of those who answered positively, they stopped smoking for an average of 4.6 years (M=55.4 months). Of those who answered positively that they smoke during this period, the average age of starting smoking was 18 years (M=17.7) and therefore the average number of years of smoking is 43 (M=43), while the average number of cigarettes per day is 20 (M=20.1). Regarding the reasons for starting smoking, social influence (43.4%), curiosity (24.3%), "fashion" (19.7%), as well as stress and personal problems (10.5%). Finally, the cigarettes that are preferred are filtered (88.2%) versus unfiltered (1.3%) and twisters (7.2%) (Table 3).

Opinions/Attitudes about Smoking Cessation

Based on the results, 94.7% of respondents stated that their doctor advised them to stop smoking immediately. Also, 75% believe that smoking harms their health a lot, compared to 21.1% who said that smoking harms their health to a small extent. Moreover, 53.3% of respondents stated that it is very difficult to quit smoking. Regarding the reasons, smoky atmosphere (65.2%), seeing other patients (52%) and staff (52.6%) smoking were mentioned to a very, very large extent. It should be noted that 9.2% stated as additional reasons stress and/or habit. In addition, 62.8% (N=94) of the respondents stated that they would need help to stop smoking and mainly nicotine substitutes - mastics and stickers (47.4%). It is noteworthy that 34.2% (N=52)

admitted that they do not want help, but that quitting smoking depends only on their own will.

Hospital Smoking Policy

According to the statistical analysis, 81.6% see staff smoking at work and specifically outside (78.3). 43.4% of respondents believe that staff should not be allowed to smoke at work. It was also mentioned that staff (86.8%) and visitors (87.5%) should not smoke together with patients. Moreover, 50.7% consider that the rules for smoking in the department are very/very high. Furthermore, 99.3% believe that staff should encourage smokers to stop/cut down and 63.8% that it is important for staff members to lead by example.

Moreover, 89.5% know who the reference person is and 85.6% state that the reference person smokes. 73.7% disagree that they would trust a non-smoking referent more than a smoker, while 75.7% disagree that they can work better with a smoking referent than a non-smoker.

Emotional Intelligence

All subscales of emotional intelligence range at above average levels. A higher mean was found in the subscale of sociability (M=4.9, SD=1), then well-being (M=4.9, SD=.8), then emotionality (M=4.7, SD=1) and finally self-control (M=4, SD=.9) (Table 4).

Smoking and Emotional Intelligence Relation

Using the Spearman coefficient, the existence of a correlation between emotional intelligence and age of onset, number of cigarettes/day and years of smoking was examined (Table 5). At a significance level of $\alpha=.01$, a statistically significant negative correlation was found

Table 3: Smoking habits and smoking history.

	N	Minimum	Maximum	M	SD
Number of cigarettes per day	152	10	40	20.1	6.2
Age of smoking initiation	152	15	24	17.7	1.5
Years of smoking	151	26	60	43	8.2
Duration of smoking cessation (in months)	17	5	192	55.4	43.9

Table 4: Descriptive statistics of emotional intelligence subscales.

	Minimum	Maximum	M	SD
Well-being	2.8	6.7	4.9	0.8
Self-control	2	6.3	4	0.9
Emotionality	2.5	6.9	4.7	1
Sociability	2.3	7	4.9	1

Table 5: Correlations between smoking and emotional intelligence (N=150).

	Cigarettes/day	Age of onset	Years of smoking
Well-being	-0.14	0.18*	-0.19*
Self-control	-0.25**	0.15	-0.01
Emotionality	-0.33**	0.23**	-0.12
Sociability	0.17*	-0.11	0.02

*Correlation is significant at .05 level (2-tailed)

**Correlation is significant at .01 level (2-tailed)

between emotionality and the number of cigarettes/day ($p < .01$) and a statistically significant positive correlation between emotionality and age of smoking initiation ($p < .05$). At a significance level of $\alpha = .05$, a statistically significant negative correlation was found between well-being and years of smoking ($p < .05$), as well as a statistically significant positive correlation between well-being and the age at which smoking began ($p < .05$), but also between sociability and the number of cigarettes/day ($p < .05$).

Discussion

From the statistical analysis it was found that while the doctor has advised almost all patients to stop smoking and that while almost everyone knows that smoking greatly damages their health, the vast majority continue to smoke, as it is too much for them/very difficult to stop this habit. All study participants started smoking during adolescence/early adulthood, which has been reported by other studies. Stress was found to be a factor associated with the smoking habit.

The results regarding the relationship between emotional intelligence and the history and habits of smokers are interesting. More specifically, a statistically significant negative correlation was found between emotionality and number of cigarettes/day, as well as between well-being and years of smoking. Therefore, dimensions of emotional intelligence are inversely related to years of smoking and number of cigarettes per day, which is consistent with what has been reported by other scholars [29]. However, a positive correlation was also found between emotionality and age of smoking initiation, between well-being and age of smoking initiation, and between sociability and number of cigarettes/day. Therefore, dimensions of emotional intelligence are associated with a positive relationship with age of smoking initiation and number of cigarettes per day, which is contrary to what has been found in previous research. Also, self-control, emotionality and sociability were not found to be correlated to a statistically significant degree with years of smoking, while no correlation was found to a statistically significant degree between self-control-age of smoking initiation and sociability-age of smoking initiation.

Overall, therefore, it cannot be argued that higher levels of emotional intelligence are related to more positive smoking behaviors such as frequency and age of initiation, as has been supported by various studies in the past [30,31]. Possibly these results can be interpreted considering the moderate level of emotional intelligence found in the participants of the present research. The characteristics of the specific patient sample (e.g., older age and therefore more years of smoking) may be another reason why the findings of this study partially contradict the findings of earlier studies, considering that smoking it is also a habit that is difficult to break, especially after several years of smoking.

Conclusions and Suggestions

Even though the findings of this research are not entirely consistent with the findings of previous studies regarding the inverse relationship between emotional intelligence and smoking, there are indications that this relationship is partially valid. This means that emotional intelligence can be an important factor that can reduce

the frequency of smoking and strengthen a positive behavior towards stopping this habit.

Consequently, emotional intelligence training can effectively facilitate individuals' adequate adaptation to health conditions [32], while individuals with higher levels of emotional intelligence can better benefit from prevention programs. In a previous study, an educational intervention based on emotional intelligence was used to reduce smoking, the results of which showed that it was effective in smoking cessation [33,34]. Overall, it has been reported by various scholars that educational programs based on emotional intelligence can be beneficial for reducing smoking dependence and overall adopting behaviors that reduce smoking intention. In addition, stress management training and training aimed at enhancing emotional intelligence have been suggested to lead to a reduction in psychopathology in patients with coronary artery disease. Therefore, it is proposed to design and implement educational programs that aim to strengthen and exploit emotional intelligence, both at the level of prevention and treatment of smoking.

However, further research is needed in the Greek population, especially considering that the sample of this paper consists mostly of old-aged men. The composition of the sample and its origin from a specific department of a specific nursing unit limit its representativeness and therefore the generalizability of the results does not exist and therefore, a more representative sample of the population is necessary.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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